

## Title (en)

METHOD AND APPARATUS FOR SIGNAL ACQUISITION IN OFDM RECEIVERS

## Title (de)

VERFAHREN UND VORRICHTUNG ZUR SIGNALBESCHAFFUNG IN OFDM-EMPFÄNGERN

## Title (fr)

PROCÉDÉ ET APPAREIL D'ACQUISITION DE SIGNAL DE RÉCEPTEURS À MULTIPLEXAGE PAR RÉPARATION ORTHOGONALE DE LA FRÉQUENCE

## Publication

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## Application

**EP 08783318 A 20080806**

## Priority

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- US 93530407 P 20070806

## Abstract (en)

[origin: WO2009018655A1] A method and apparatus for signal acquisition in an OFDM receiver relies on a preamble training sequence to synchronize the receiver in time (e.g. determining the start of a frame) and in frequency (carrier frequency offset compensation). The preamble training sequence has a periodic structure and the method and apparatus perform a cross-correlation technique using a matched filter to achieve time synchronization and / or frequency synchronization and / or channel estimation, the latter being especially useful in multi-antenna receivers for diversity combining purposes. Many advantages derive from performing at least two and preferably all three operations jointly, in terms of latency, hardware complexity, and length of training sequence required to achieve satisfactory convergence on all counts. The periodicity of the training sequence is exploited to reduce considerably the main filter complexity and optionally dynamically adjust carrier offset compensation throughout the filtering process, thus improving the quality of all final estimates (carrier frequency offset, time synchronization, and channel).

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## Citation (search report)

- [X] US 2005163261 A1 20050728 - NAKAO SEIGO [JP], et al
- [I] US 2007053461 A1 20070308 - NAKAO SEIGO [JP]
- [I] CN 1427594 A 20030702 - LIUHE WANTONG MICROELECTRONIC [CN]
- See references of WO 2009018655A1

## Citation (examination)

WANG YONG ET AL: "A novel scheme for symbol timing in OFDM WLAN systems", COMMUNICATIONS AND INFORMATION TECHNOLOGY, 2004. ISCIT 2004. IEEE INTERNATIONAL SYMPOSIUM ON SAPPORO, JAPAN OCT. 26-29, 2004, PISCATAWAY, NJ, USA, IEEE, vol. 2, 26 October 2004 (2004-10-26), pages 642 - 645, XP010783461, ISBN: 978-0-7803-8593-1, DOI: 10.1109/ISCIT.2004.1413793

## Designated contracting state (EPC)

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## DOCDB simple family (application)

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